

CLAIMS

- [1] A combustion exhaust gas processing device comprising:
- a dust collector collecting dust in combustion exhaust gas;
- a wet dust collector collecting water soluble components and dust in the combustion exhaust gas passed through the dust collector; and
- a catalyst tower decomposing and removing NO_x and/or dioxins in the combustion exhaust gas passed through the wet dust collector.
- [2] The combustion exhaust gas processing device as claimed in claim 1, further comprising a reheater heating the combustion exhaust gas discharged from the wet dust collector at a front stage of the catalyst tower.
- [3] The combustion exhaust gas processing device as claimed in claim 1 or 2, further comprising an oxidizer adding device adding an oxidizer to the combustion exhaust gas passed through the dust collector.
- [4] The combustion exhaust gas processing device as claimed in claim 1, 2 or 3, further comprising a solid/liquid separator separating slurry discharged from the wet dust collector into solid and liquid phases, and a mercury adsorbing tower adsorbing mercury in liquid separated in the solid/liquid separator.
- [5] The combustion exhaust gas processing device as claimed in one of claims 1 to 4, further comprising a heat recovering device, at a rear stage of the catalyst tower, heating gas supplied from the reheater with the combustion exhaust gas discharged from the catalyst tower.
- [6] The combustion exhaust gas processing device as claimed in claim 3, 4 or 5, wherein said oxidizer includes hypochlorous acid soda and/or ozone.
- [7] The combustion exhaust gas processing device as claimed in one of claims 1 to 6, wherein said wet dust collector is a mixing scrubber.

[8] The combustion exhaust gas processing device as claimed in one of claims 1 to 7, wherein said combustion exhaust gas is exhausted from a cement kiln.

[9] A method of processing a combustion exhaust gas comprising the steps of:
collecting dust in combustion exhaust gas;
collecting water soluble components and dust in the combustion exhaust gas through wet process; and
decomposing and removing NO_x and/or dioxins in the combustion exhaust gas after said wet dust collection by using catalyst.

[10] The method of processing a combustion exhaust gas as claimed in claim 9, further comprising the step of heating the combustion exhaust gas before decomposing and removing NO_x and/or dioxins in the combustion exhaust gas by using catalyst.

[11] The method of processing a combustion exhaust gas as claimed in claim 9 or 10, further comprising the step of adding an oxidizer to the combustion exhaust gas after the dust collection.

[12] The method of processing a combustion exhaust gas as claimed in claim 9, 10 or 11, further comprising the step of solid/liquid separating the slurry generated by the wet dust collection, and adsorbing mercury in liquid separated in the solid/liquid separation.

[13] The method of processing a combustion exhaust gas as claimed in one of claims 9 to 12, wherein residence time of said exhaust gas in the wet dust collector is more or equal to 1 second, and less or equal to 10 seconds.

[14] The method of processing a combustion exhaust gas as claimed in claim 11, 12 or 13, wherein said oxidizer includes hypochlorous acid soda and/or ozone.

[15] The method of processing a combustion exhaust gas as claimed in one of

claims 9 to 14, wherein said combustion exhaust gas is exhausted from a cement kiln.